

## EXPLANATION OF THE PLATES.

## PLATE XLI.

*Chrysichthys büttikoferi*, adult, p. 721, 4/9 nat. size. Dentition nat. size.

## PLATE XLII.

A. *Chrysichthys büttikoferi*, juv., p. 723.

B. *Hemichromis tersquamatus*, p. 717.

## PLATE XLIII.

*Chrysichthys persimilis*, p. 727, 5/7 nat. size.

## PLATE XLIV.

*Chrysichthys camaronensis*, p. 729, 1/3 nat. size. Dentition nat. size.

## PLATE XLV.

A. *Chrysichthys kingsleyæ*, p. 728, 6/7 nat. size.

B. *Petersius occidentalis*, p. 731, with enlarged views of anal fin of male and female, and of dentition.

2. On a few Points in the Structure of Laborde's Shark (*Euprotomicrus labordei*). By ROBERT O. CUNNINGHAM, M.D., C.M.Z.S., Professor of Natural History, Queen's College, Belfast.

[Received April 28, 1899.]

An individual of this curious and little-known Elasmobranch having recently reached my hands, I have drawn up a few notes on its anatomy, which, though very imperfect and fragmentary, I venture to submit to the Zoological Society of London.

The specimen, which is a female, was, I am informed, one of several obtained by Captain F. R. Patey, of the ship 'Mowwan,' having been washed on board his vessel between 90° & 100° W. long. and in about the latitude of Cape Horn, and was presented to our Museum in Queen's College through the intervention of Mr. Adam T. Barklay of Belfast. As examples previously met have been recorded as inhabiting the Indian Ocean, the range of the species must be considerably more extensive than was formerly supposed—a not surprising circumstance when the wide distribution of many pelagic species of animals is taken into account. Two causes have combined to render the following description much less complete than I could have desired. In the first place, I have not felt warranted to carry out the dissection to such an extent as to render the specimen unavailable for Museum purposes, and, secondly, the condition of the viscera was unfortunately not such as to permit of detailed examination.

In respect of size my example does not materially differ from those

of which the dimensions are given in the British Museum Catalogue of Fishes (vol. viii. p. 428), being a little less than 10 inches in length measured from the extremity of the snout to the tip of the upper lobe of the caudal. The skin, as in the British Museum individuals, is, regarded as a whole, of a uniform brownish-black colour, but while the proximal portion of the azygos and paired fins are of the same tint, the distal present a marked contrast, being of a dull yellowish hue. There is a well-marked mid-dorsal and an equally well-marked mid-ventral groove, and on either side, not far from the dorsal surface, a rather deep lateral groove runs backward nearly to the base of the caudal. The area occupied by the five branchial apertures is about 8 mm. in length, the last of the slits being immediately in front of the base of the pectoral. The individual gill-slits are very small (only 2 millimetres in length), while the spiracles, on the other hand, are noteworthy for their large size; semicircular in outline, they measure 5 millimetres along the posterior border.

On the upper surface of the head are two well-marked curved longitudinal grooves, continuations forward of the lateral grooves already mentioned, connected by a transverse one situated immediately between the spiracles. Each of these grooves exhibits a series of pores (the openings of mucus-canals) which can be traced backward for some distance along the sides of the body. A row of pores further passes from the longitudinal groove of either side obliquely downward between the spiracle and the eye, and a second transverse row runs between the eye and the nostril to join a third row situated at right angles at some distance below the level of the eye. Additional pores more scattered in distribution occur in the skin covering the upper, and also in a less degree in that clothing the lower jaw.

The *nares* occupy a considerable area near the tip of the snout, being removed from the mouth by a considerable interval. Their upper portion is rounded, and they are continued ventrally in the form of elongated slits overlapped by a valve of skin. The *eyes* are large, measuring 9 mm. in antero-posterior diameter.

The *scales* are very small, communicating a minutely granular appearance to the skin, which is almost smooth, there being hardly any perceptible harshness to the feel when the fingers are passed along it from head to tail or *vice versa*. Magnified a few diameters they appear in the form of slightly angular papillæ. When isolated, after boiling a fragment in caustic potash, they exhibit irregularly lozenge-shaped outlines and possess an elevated central and a depressed marginal area with a slightly toothed edge.

The aperture of the *mouth* at first sight appears much more extensive than it actually is, owing to a deep groove which runs backward from each angle. In the lower jaw only a single row of teeth are present. As noticed in Dr. Günther's excellent diagnostic description, they are of considerable size, triangular in outline and non-serrated. The teeth of the upper jaw are much smaller, conical, and are disposed in three series.

Unfortunately the abdominal cavity had not been opened before the fish was handed over to me, and in consequence of this, on removing the wall of the left side, I found that the viscera were by no means in such a satisfactory state of preservation as could have been desired, various of the organs being in a soft and decomposing condition. The *stomach*, which was attached to the dorsal wall of the abdomen by a broad peritoneal fold, possessed the ordinary siphonal form. The proximal portion was very capacious, thin-walled, and marked on the internal surface with numerous regularly disposed longitudinal rugæ. It was entirely empty of food. The distal moiety, comparatively long and narrow, was not clearly rounded off externally from the first portion of the intestinal tract, which was separated from the *colon* by a well-marked constriction succeeded by a short thick-walled dilatation. The *colon* possessed a typical transverse spiral valve. The short *rectum* had appended to it a well-marked rectal gland.

The *liver* consisted of a pair of apparently equal-sized large flattened lobes tapering to their pointed posterior ends. The *spleen*, of a dark greyish hue, was triangular in general form, with the apex pointing backward from the junction of the proximal and distal portions of the stomach and sent a long narrow lobe along the latter. The *pancreas* was of a whitish-yellow colour; in respect of outline it was long, slender, and band-like, and was provided with a long duct which opened into the intestine near its commencement.

The *ovaries*, very imperfectly preserved, formed a pair of elongated, somewhat lobulated bodies of a yellow colour, and the *oviducts* were of comparatively wide diameter.

Nothing could be made out with sufficient certainty as regards the nature of the other viscera.

3. On the Astræid Corals collected by the Author in the South Pacific. By J. STANLEY GARDINER, M.A., F.Z.S., Fellow of Gonville and Caius College, Cambridge.

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(Plates XLVI.-XLIX.)

The Corals of the family Astræidæ are represented in the collection made in the South Pacific by 115 specimens, which I have referred to 12 genera and 48 species. Of these I have described 6 species as new, and I have redescribed many of the known species, or added such characters as I have found of practical value for separating the different species of the several genera.

I have found the work very arduous on account of the very numerous synonyms existing, not only for species but also for genera. Martin Duncan's "Revision of the Madreporaria"